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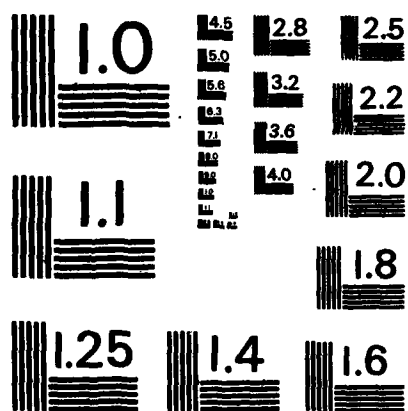
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NATIONAL EMERGENCY TELECOMMUNICATIONS POLICY: WHO'S IN CHARGE?

ROBERT A. REINMAN

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**NATIONAL EMERGENCY
TELECOMMUNICATIONS
POLICY**

Who's in Charge?

**NATIONAL EMERGENCY
TELECOMMUNICATIONS
POLICY**

Who's in Charge?

by

**Colonel Robert A. Reinman, USAF
Senior Fellow**

National Security Affairs Monograph Series 84-2

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FOREWORD

During a heavy snowstorm at rush hour on 13 January 1982, an Air Florida passenger jet crashed into the 14th Street Bridge between Washington, DC and Virginia. At almost the same time, a subway train jumped its tracks beneath the District of Columbia. In addition to the tragedy of these accidents themselves, rescue operations were hindered and the potential for further disaster increased as gridlock shut down traffic in the nation's capital. The organization of local emergency communications, instead of lessening confusion, actually added to it. Imagine such a disaster in terms of a nuclear attack.

Colonel Robert A. Reinman, US Air Force, begins by keying on the Air Florida disaster, then he focuses on *national emergency telecommunications* by examining the overlaps, gaps, and inconsistencies in our current patchwork system. He concludes by drafting a blueprint for restructuring Federal telecommunications policy and by reporting recent encouraging activity in industry, Congress, and the White House which addresses this vital national concern.

The true test of any communications system is its ability to function in an emergency. Nothing is of greater consequence. The National Defense University publishes this study in keeping with its missions of suggesting alternatives to present policy and circulating thoughtful writing on important matters of national security.

Richard D. Lawrence

Richard D. Lawrence
Lieutenant General, US Army
President, National Defense
University

ABOUT THE AUTHOR

Colonel Robert A. Reinman, US Air Force, earned a B.S. degree (Electrical Engineering) from Newark College of Engineering (now the New Jersey Institute of Technology), an M.S. degree (Electrical Engineering) from the Air Force Institute of Technology, and M.S. (Mathematics) and Ph.D. degrees from the University of Illinois. Colonel Reinman's recent assignments include Associate Professor of Electrical Engineering at the Air Force Institute of Technology, Engineering Division Chief for the Defense Communications Agency-Europe, and Commander of the 1836th Engineering Installation Group responsible for all Air Force telecommunications, air traffic control, and radar installations throughout Europe and the Middle East. He has published articles in the *Institute of Electrical and Electronics Engineering Transactions on Communications* and has presented papers to the Princeton Conference on Information Science and Systems and other conferences, on subjects such as nonlinear estimation and detection theory, reconstruction of noisy signals from their samples, troposcatter telecommunications systems, and detection of signals in atmospheric noise. Colonel Reinman is the Director of the Defense Communications Engineering Center in Reston, Virginia.

PREFACE

(This research was redirected

This study began as an attempt to define the role of and suggest improvements for the management of the National Communications System, an organization President Kennedy formed in 1963 to develop a unified and interoperable Government telecommunications system capable of providing necessary communications to the Federal Government under all possible circumstances, including nuclear war. The results were to be implementable by the manager of the National Communications System.

However, early in the research, while gathering historical data on Presidential guidance for emergency telecommunications, *(it was)* I discovered that a much larger problem would keep me from completing my initial goal—I found that *no one was in charge* of national emergency telecommunications policy and implementation. Guidance was fragmented with overlaps, gaps, and inconsistencies, all of these problems causing wasteful duplication of effort, inefficient use of funds, and a general lack of progress toward the system President Kennedy envisioned. Faced with this ~~larger~~ problem, *(it was)* I modified my original intent somewhat, redirecting my research to also conceive an organization capable of implementing reforms.

This research would not have been possible without the generous support of many people. The candor of senior officials at the National Security Council, the Office of Science and Technology Policy, the Department of Defense and

Commerce, the Federal Emergency Management Agency, and the National Communications system provided rare insights into how we got to where we are. At the National Defense University, my fellow researchers provided valuable editorial and conceptual assistance throughout the research development and writing periods. Colonel Jack Taylor of the National Communications System and Mr. Lonn Henrichsen of the Federal Emergency Management Agency took much of their valuable time to lead me through the background work and provided especially germane comments in reviewing my manuscripts. I am indebted to the editors of the National Defense University Research Directorate for their valuable assistance in bringing this monograph to press. Last but certainly not least, I thank Colonel Fred Kiley, whose professional, editorial, and personal contributions throughout the project were crucial to its successful completion.

ROBERT A. REINMAN

1. CAN WE COMMUNICATE IN A CRISIS?

At 4:00 p.m. on 13 January 1982, during a raging snow-storm, Air Florida flight 90 took off from National Airport in Washington, DC. The airplane climbed about 400 feet, stalled, and hurtled into the frozen Potomac River after striking a bridge crowded with early rush hour traffic. About 30 minutes later, in a separate accident not far from the bridge, a mistake in switching in the Washington subway system misrouted a crowded subway train, causing it to slam into a concrete abutment.

This rare combination of events severely tested local governments' capabilities for handling emergencies. Traffic in the Nation's capital, already slowed by the snow, was virtually paralyzed for several hours as rescue operations struggled. The toll in human terms was heavy: 74 of the 79 people on the airplane died, 4 commuters on the bridge died and others were injured, 3 subway passengers died and 25 were injured.

Subsequent investigations of the tragedies revealed that local authorities were not adequately prepared to deal with emergencies of this dimension and underscored the critical role of communications in an emergency. Communications, or the lack thereof, were a key factor in the events, contributing to the confusion instead of alleviating it. Because it illustrates the importance of communications in coping with an emergency, this local incident is a revealing introduction to the

infinitely greater problems of a national emergency and the role of telecommunications.

What were emergency communications like in this dual disaster? Because the airplane sent no distress call before the crash, the tower didn't know where it was or even if it were down. When the departure control radar operator lost the radar trace from the craft, the tower tried to call the plane by radio. When this failed, the tower operator asked a landing aircraft to taxi to the end of the runway to look for the lost plane. The information eventually got to the tower because a commuter with a citizens' band radio saw the accident while driving and reported the crash to a home radio operator. This person called the emergency phone number, 911, and the emergency control center called the airport tower to ask about it. The tower's response was, "Oh, is that where it is?"

Communications inadequacies hampered rescue coordination efforts. Police, fire, and rescue equipment from the District of Columbia, Virginia's Arlington County, and several other jurisdictions responded, but no one activated the common emergency frequency linking the two jurisdictions, so both units set up command posts. Finally, about 15 minutes after the crashes, a lone National Park Service helicopter arrived on the scene and carried or dragged the five survivors to shore, one at a time. The chatter on the helicopter radio was so great that the pilot turned the radio off, so he could talk internally with his rescueman. Although other helicopters were in the area, none arrived to help.

This lack of response cost one life. All the victims on the bridge would have died anyway, and all but one of the passenger and crew fatalities resulted from impact injuries in the crash. A man who survived the crash repeatedly gave the helicopter's life ring to the other survivors, but when the helicopter came back for him, he had slipped into the water and drowned. As hospitals prepared to receive survivors, their best information came from television coverage rather than established emergency communications.

Communications problems also hampered rescue in the subway. The accident knocked out all radios and public address systems for the train, so subway employees on the train could not communicate with either the passengers or the rescue teams. The train had no emergency radios. Fortunately, no panic or fire occurred during the evacuation, and all survivors escaped the tunnel in just under one hour.

Imagine what communications would be like if at the same time the two Washington tragedies were happening, Mount St. Helens erupted, a major earthquake devastated California, a hurricane swept through New Orleans, and tornadoes devastated Kansas City. Multiply this destruction and confusion by the number of expected nuclear detonations resulting from a Soviet attack, and you have an idea of the monumental problems associated with emergency telecommunications.

We have trouble communicating in a local crisis because we're not organized and no one is in charge, clearly illustrated by our Washington, DC example. We have the same problems to a greater extent at the national level. Jurisdictional issues, no central source of telecommunications policy guidance, and changing players combine to make our emergency telecommunications preparedness incomplete, with overlaps and gaps in the system.

Emergency telecommunications effectiveness is the linchpin which holds the mobilization and emergency response systems together. Reliable and survivable telecommunications are also key, not only to the controlled use of our current military arsenal but more significantly to the more advanced and sophisticated weapons we are developing for our future needs.¹ Thus, it is timely that the Reagan administration has moved emergency preparedness to the forefront of its special concerns.

Responsibilities for national emergency telecommunications, however, are fragmented. Regulations prescribing authority and responsibility lines are vague and inconsistent and not organizationally current. Politics has caused the dis-

banding of an organization which had the authority to provide national telecommunications policy. And finally, different administrations have spread authority in varying ways throughout the executive branch.

To show how we got to where we are, this monograph traces the history of national emergency telecommunications and describes the current system, emphasizing key issues affecting telecommunications readiness. Using emergency telecommunications as a basis, it investigates options for addressing the issues and recommends a restructuring at the national level to provide a unified national telecommunications policy that is responsive in peacetime, during natural or manmade disasters, and in wartime.

2. HOW WE GOT HERE

The Communications Act of 1934 gave the President broad powers to provide necessary telecommunications service during war or other national emergencies. After this authorization, Federal communications systems developed independently through World War II and into the 1950s until communications failures during the Cuban crisis of 1962 led to the formation of the National Communications System (NCS) in 1963.

Since 1963, Presidential directives and reorganizations have transferred responsibilities for national emergency telecommunications several times. President Kennedy assigned the Secretary of Defense to be the NCS Executive Agent responsible for implementing and managing the system. In 1970, President Nixon used an Executive order to form the Office of Telecommunications Policy in the Executive Office and made the policy office responsible for centralized national telecommunications policy. President Carter abolished the policy office in 1978 to reduce the size of the Executive Office of the President and to correct alleged misuses of the policy office by the Nixon and Ford administrations.

The creation of the Federal Emergency Management Agency (FEMA) in 1979 further complicated authority lines for emergency telecommunications responsibility. Unfortunately, all of these actions have caused inconsistency and confusion.

Before 1963—Initial Development

So that we can improve the current system and make sound recommendations for changes, a quick look at the evolution of Presidential guidance on emergency telecommunications is necessary.

Before World War II. Prior to World War II, communications for the Federal Government developed on an as-needed basis. Civilian government agencies used the commercial telephone and telegraph facilities by exercising varying degrees of control over their systems. Each military service developed its own specialized functional and administrative worldwide networks with little regard for compatibility or joint use with each other or with the civilian systems. Within the Navy Department, Marine and Navy ground control teams could communicate with Marine and Navy close air support aircraft, and in the War Department, Army ground control teams could communicate with Army close air support aircraft. Elsewhere, Federal systems developed with very little interaction.

World War II. During World War II, the large-scale joint operations and demands on telecommunications services quickly demonstrated the need for compatible communications and priority in the use of limited communications assets. Within the military, a board of war communications brought the chief Army and Navy communicators together with representatives of the Treasury and State Departments and the Chairman of the Federal Communications Commission (FCC). With little applicable background or experience, this group, together with liaison officers from allied nations, had to plan and execute vast communications tasks such as those in support of the Normandy invasion. Meanwhile, within this country, civilian war emergency agencies often lost their lines to the higher priority military traffic. This prompted the civilian war emergency agencies to form a separate dedicated teletype network.

Post-World War II. After World War II, the trend toward common, compatible Federal telecommunications systems

continued. The Federal Works Agency took over the dedicated teletype network and expanded it from 34 stations in 1946 to 200 stations by 1960. The General Services Administration (GSA), formed in 1949, assumed responsibility for all common Government civilian services, including those of the Federal Works Agency. In 1951 President Truman's Communications Policy Board established a telecommunications advisory board in the Executive Office of the President to formulate broad national communication policies. President Eisenhower transferred this position to the Office of Defense Mobilization, and President Kennedy further moved it to Defense Mobilization's successor, the Office of Emergency Preparedness, where one of the assistant directors had the title of Director of Telecommunications Management.

The GSA formed a communications system to support civilian portions of the executive branch both in peacetime and times of crisis. In 1961, after several studies, President Kennedy authorized GSA to develop the Federal Telecommunications System (FTS) to serve the day-to-day needs of Government civil agencies. The FTS consists of two separate nationwide leased systems: a telephone system and a record message system known as the Automated Record System.

The military also recognized the need for standardization both in overall management and in communications. The National Security Act of 1947 placed the three military departments under a common set of rules and cost effectiveness principles aimed at avoiding duplication; also, the act established defense agencies to perform common missions and functions. Duplication among the military departments, however, was common. For example, each had communication links between San Francisco and Hawaii, and different Air Force systems often linked the same two points. To resolve these inefficiencies, the Secretary of Defense established the Defense Communications Agency (DCA) in May 1960 to establish, improve, and operate a single, compatible, long-haul, point-to-point Defense Communications System for the Department of Defense and other governmental agencies as directed. The DCA consolidated the relay centers and

communications links of the Services under centralized management and control although the individual military services continue to install, operate, and maintain the stations. Two area centers in Europe and the Pacific, and an overall center in Washington maintain centralized control of the DCS.

Other executive branch agencies developed specialized systems to support their needs. These include separate worldwide networks supporting the National Aeronautics and Space Administration space missions, State Department communications with our embassies, and Federal Aviation Administration airport and weather nets. Some of the systems are only continent-wide; the Departments of Commerce and Agriculture, the Federal Reserve Bank System, the Veterans' Administration, and others all have extensive leased systems with little or no interconnectability with other systems. Sometimes interoperability is impossible because of the need for continuous transmission, instant availability, or privacy.

1963-1979—Years of Change

The Cuban missile crisis of 1962 chillingly demonstrated the inadequacies of our existing emergency national communications system. For the first time, a real threat forced our national military and civilian agencies to respond under actual emergency conditions. From a communications standpoint, this mobilization showed that we were ill-prepared to provide coherent and timely guidance simultaneously to the nation's military, civilian, and Government agencies. We failed our first (and only) real test of communications mobilization during a nationwide crisis.

The formation of the National Communications System. Remedial action was quick. Immediately after the crisis, President Kennedy directed the National Security Council to investigate the failures and recommend necessary changes. A committee, headed by Deputy Under Secretary of State for Administration, William H. Orrick, Jr., completed its report in early 1963. On 21 August 1963, President Kennedy directed the formation of the National Communications System, to es-

establish a unified governmental communications system linking together, improving, and extending the communications facilities and components of the various Federal agencies on an evolutionary basis.¹ The NCS was to provide Federal Government communications under all normal and emergency situations (including war) and develop the hardness, mobility, and circuit redundancy needed to assure essential communications in all circumstances.²

Implementation has been slow. Even though the clearly stated direction for a unified system has not changed in the 20 years since President Kennedy formed the NCS, no unified system now exists, nor is there any indication whether one ever will. Successive administrations have reorganized responsibilities to the point that

the Federal telecommunication organization is fragmented, lacks centralized policy formulation, planning, program supervision and coordination, and this raises serious questions within both the government and the common carrier industry as to who is in charge of telecommunications support for national emergency/ security purposes.³

The 1963 Presidential memorandum established policy control in the Office of emergency Preparedness, a part of the Executive Office of the President. The memorandum assigned policy responsibility to an assistant, the Director of Telecommunications Management, and gave the Director the title (but not the stature) of Special Assistant to the President for Telecommunications. Figure 2-1 shows the structure mandated by the memorandum. The Director of Telecommunications Management was to provide policy, priorities, and overall guidance to the Secretary of Defense, the NCS Executive Agent responsible for overall system design, planning, management, and operational guidance. The secretary of Defense further tasked the Director of the Defense Communications Agency (as NCS Manager) to engineer, operate, maintain the system, and prepare long-term plans and objectives.⁴

Figure 2-1. NCS Organizational Structure—1963

Several problems existed in the directed structure. First, although the stated power and authority of the Director of Telecommunications Management were extensive, the small size of the appointed staff and, more importantly, the fact that the Director worked for the Director of the OEP made it virtually impossible, both from manpower and political standpoints, to set effective national policy and supervise implementation of the NCS. Second, the Special Assistant to the President for Telecommunications, the NCS Executive Agent, and the NCS Manager—each associated with a specific executive branch agency—had conflicting roles when it came to NCS (or agency) decisionmaking time: each of their agencies became a rival for telecommunications resources in time of emergency. Third, funding for the Director of Telecommunications Management was inadequate. As late as 1968, the Director's budget was only \$2 million although the office required between \$12 million and \$13 million to fulfill its mission.⁵

In 1969 a General Accounting Office report concluded that the lack of centralized policy guidance, widespread dispersion of authority and responsibility, lack of resources, and lack of stature for those involved contributed to planning difficulties. The report said the NCS long-range plan was only a compilation of independent plans drawn up by agencies to support their individual missions. The report showed that the NCS plan did not provide a blueprint for the development of an effective unified system. Further, it stated that the staff of the NCS Manager's office was not sufficient to perform the necessary system engineering for either the current or future NCS. The General Accounting Office report also said that ad hoc task groups set up by the NCS Manager with members from the NCS operating agencies were largely ineffective because of parochial interests of the individual agencies. Finally, it concluded that individual agency funding of NCS networks further inhibited effective control by NCS officials.⁶

The General Accounting Office report recommended formation of a centralized telecommunications organization at the highest level of the executive branch. This unit, free of any conflict of roles, would direct Government telecommunications

activities. It would have enough resources and stature to provide both the President and the Government strong central authority for telecommunications policy and planning, and it would incorporate the functions of the Director of Telecommunications Management and the Executive Agent and Manager of the NCS.⁷ The report further recommended that the President clarify the meaning of a "unified" communication system so that proliferation of independent agency systems would cease.

The President's chief telecommunications advisor agreed. Special Assistant to the President for Telecommunications, J.D. O'Connell, commented that the report was complete and factual with sound conclusions and that a proposed reorganization would give special attention to NCS organization.⁸

Executive Order 11490, published early in the first Nixon administration, assigned emergency preparedness functions to Federal agencies.⁹ The order gave the Office of Emergency Preparedness the responsibilities of advising the President on national goals and policies and coordinating total national preparedness functions; it tasked the Defense Department to provide military commercial requirements and develop, with the FCC and Office of Emergency Preparedness, plans and programs for emitters; and it tasked the FCC to prepare policies, plans, and procedures covering all common carrier service, broadcasting, safety radio nets, radio frequencies to licensees, and enforcement in accordance with, among other things, the 1963 NCS Presidential memo. The General Services Administration was to prepare telecommunications plans and programs for civilian activities of executive departments and agencies within the framework of the NCS.¹⁰

The formation of the Office of Telecommunications Policy. President Nixon's Reorganization Plan No. 1 of 1970, followed by Executive Order 11556, finally created an independent telecommunications function in the executive branch.¹¹ The Director of the Office of Telecommunications Policy became the President's principal advisor on telecommunications. Figure 2-2 shows the structure directed for emergency communications. The lines of authority and re-

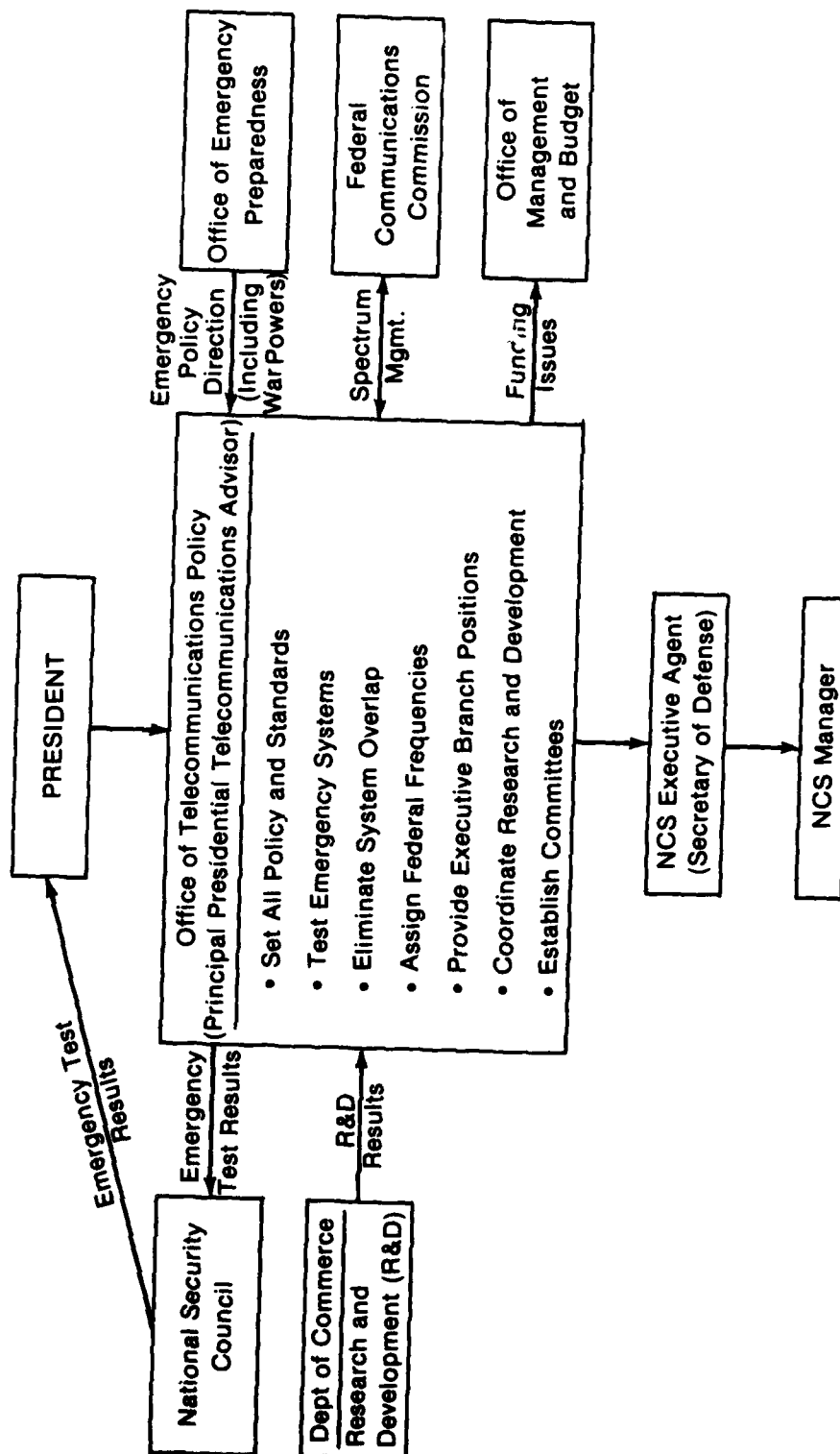


Figure 2-2. Emergency Communications Organization—1970 (Executive Order 11556)

sponsibility were clear and simple. Finally, the President had authorized the long sought and recommended organizational structure.

Even though this order centralized national telecommunications policymaking authority outside other Federal agencies, it did not resolve all organizational difficulties. The Office of Emergency Preparedness still provided overall policy direction for emergency preparedness plans, and the new Office of Telecommunications Policy had no statutory authority to direct unification measures. The biggest unresolved issue, however, was the fact that the NCS Executive Agent and NCS Manager still remained in the Defense Department, and the Executive Agent was now responsible to the Director of the Office of Telecommunications Policy, rather than the Director of Telecommunications Management, for NCS purposes. The Executive Agent had total control of the Defense Department portion of the NCS but little control or authority over the rest of the NCS.

The Office of Telecommunications Policy operated under severe constraints from 1970 until 1977. Manning was never high enough to perform broad functions effectively—authorizations ranged from a high of 65 in 1972 to a low of 41 in 1977.¹² Telecommunications directors concentrated their limited assets on policy issues for the domestic and international common-carrier communications industry and on recommendations for radio, television, and cable television. As a result, because the Office of Telecommunications Policy did not focus needed attention on emergency telecommunications, agency-oriented systems continued to develop as they had since the beginning of the NCS. By the end of the Nixon-Ford era, perceptions that the policy office was no more than a political tool used by the administration to manage the media had eroded its image. When Clay Whitehead resigned as director in late 1974, the President did not assign a new permanent director, and the Office of Telecommunications Policy's end was apparent.

The dissolution of the Office of Telecommunications Policy. In his Reorganization Plan No. 1 of 1977, President Carter

abolished the Office of Telecommunications Policy, along with several other offices in the Executive Office of the President. Executive Order 12046 implemented the plan.¹³ This order transferred the bulk of the policy office's responsibility to the Department of Commerce but spread emergency telecommunications functions to several places within the executive branch. As shown in figure 2-3, the President retained coordination responsibility for telecommunications mobilization issues but spread implementation to the Office of Science and Technology Policy, the National Security Council, and the Department of Commerce. The Secretary of Defense and DCA Director retained their NCS roles as Executive Agent and Manager, respectively.

The formation of the Federal Emergency Management Agency and Presidential Directive 53. In 1979 President Carter established FEMA to consolidate Federal civil preparedness programs.¹⁴ By Executive Order 12148, he tasked the Director of FEMA to establish Federal policies for and coordinate with all civil defense and civil emergency planning, management, mitigation, and assistance functions of executive agencies.¹⁵ For this purpose "civil emergency" included any wartime emergency or threat thereof which caused or could cause either substantial injury or harm to the population or substantial damage to or loss of property.¹⁶ To ensure that plans were coordinated, the order made FEMA civil defense actions subject to oversight by the Secretary of Defense and the National Security Council.¹⁷

On 15 November 1979, President Carter issued Presidential Directive 53 (PD-53) which emphasized again the importance of interoperable communication systems in times of national emergency. The directive stated that our telecommunications systems must be able to support the spectrum of war requirements ranging from operational control of forces—even in protracted nuclear conflict—to support for mobilization, intelligence, diplomacy, continuity of government, and recovery after a war or any other disaster. The directive also again stressed the need for interoperable systems capable of

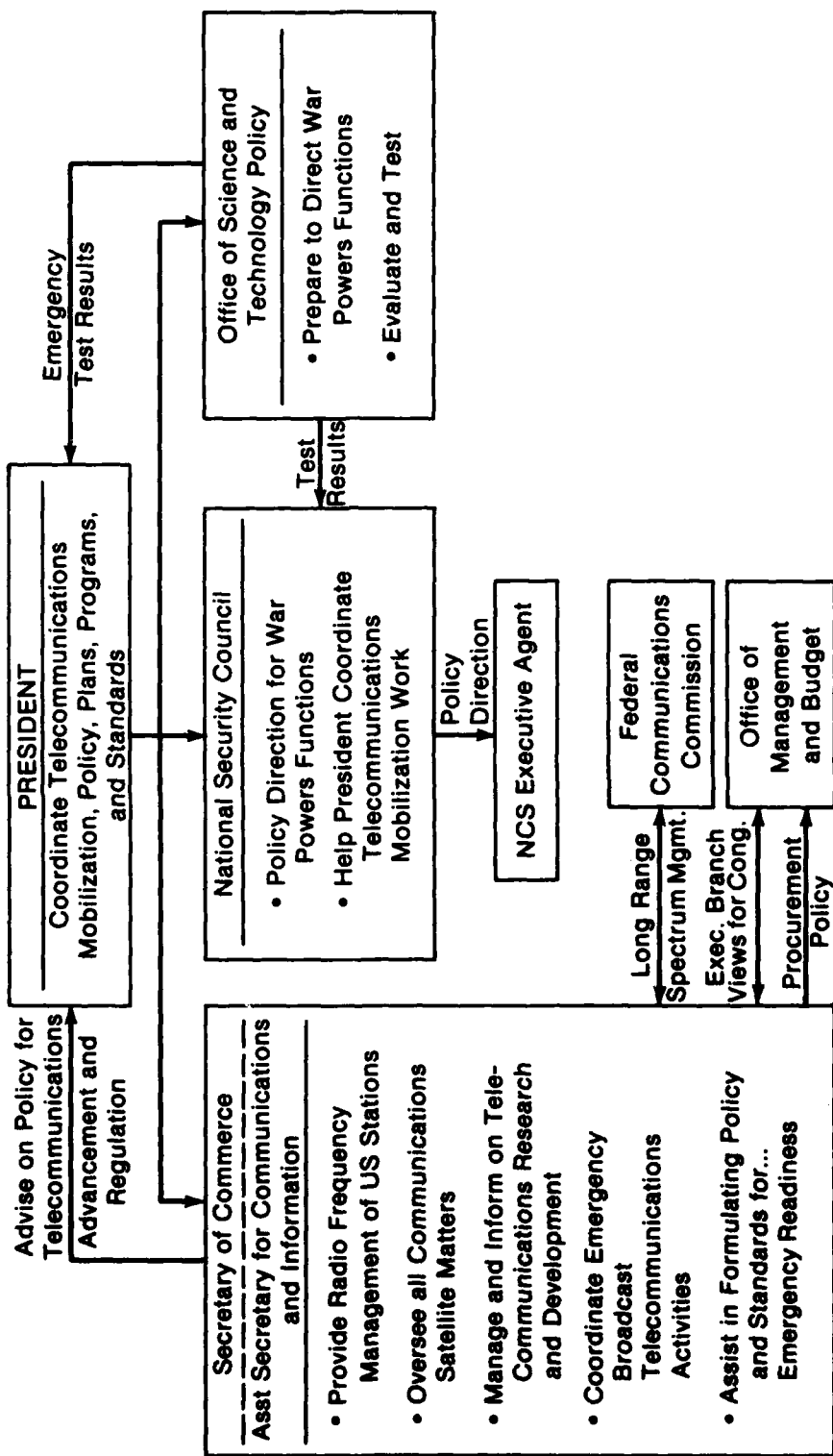


Figure 2-3. Emergency Communications Organization—1978 (Executive Order 12046)

supporting all missions and placed prime reliance on the NCS for assurance of this capability.

Thus PD-53 clearly spelled out what the country's telecommunications systems must be able to support.

3. WHERE WE ARE TODAY

In support of the requirements spelled out in PD-53, do current organization and systems effectively serve our need for a national emergency telecommunications system? The answer lies in the following examination of strengths and weaknesses of what we have now.

National emergency telecommunications are a hodgepodge of laws, Executive orders, history, personalities, and compromises. No centralized guidance or driving force assures that expansions of existing systems or development of new systems contribute effectively to anything more than the mission of the system's owner. Authority lines are not clear, and because each agency controls its own telecommunications funding, systems development lies with the developing agency. In the Defense Department alone, funding is scheduled to rise from \$8 billion to over \$21 billion annually to coincide with the Reagan administration's assessment that communications are as important as the strategic systems they support.¹ Even so, the NCS has not had a significant impact because of understaffing and a lack of clout although the current NCS manager has made it much more visible in national circles by vigorously warning both Government and non-Government officials of its shortcomings.

The President

President Carter realized the overwhelming importance of telecommunications to the nation. When he disbanded the Office of Telecommunications Policy in 1978, he transferred to himself the function of coordinating the development of policy, plans, programs, and standards for the mobilization and use of the nation's telecommunications resources in any emergency and did not further delegate that responsibility (figure 2-3).² He tasked the National Security Council to assist him in performing this function, but this personal Presidential responsibility remains today. The National Security Council and the Office of Science and Technology Policy have acted to delegate responsibilities in these areas, but according to the Presidential order, the President must do the coordinating himself. Taken as an indicator, maintaining policy-making authority in the hands of the President reflects the importance of emergency communications to our nation's survival.

Non-Cabinet Organizations

National Security Council and National Communications System. The National Security Council is the policy conduit to the President on emergency national security telecommunications matters. Executive Order 12046 directs the NSC to consult with other agencies and ensure that the NCS will meet the essential needs of all Government agencies.³ The council staff currently has only two people assigned part-time duties in emergency telecommunications matters.

The primary task of the NCS is to assure the development and operation of a unified and interoperable telecommunications system. Despite this formidable responsibility, the NCS has not been able to prevent the essentially independent development of Federal telecommunication systems which are neither unified nor interoperable.

Several factors dilute NCS control. First, the NCS does not have enough clout, control or involvement, to carry out its mission. Throughout the years, Federal agencies have devel-

oped their own telecommunications systems with little regard to interoperability or unification. For example, GSA operates a nationwide switched telephone network, FTS, and the Department of Defense operates a worldwide switched telephone network, the Automatic Voice Network (AUTOVON). Some of the switches for the two systems are located in the same buildings, yet calls cannot be transferred from one system to the other.

A second restricting factor, the NCS's location and staffing within the Defense Department, constitutes an assemblage which is not only inefficient but also a potential conflict of interest. Although the Secretary of Defense is the NCS Executive Agent, the Deputy Under Secretary of Defense for Communications, Command, Control, and Intelligence (C³I) handles telecommunications matters. The NCS Manager (the Director of the Defense Communications Agency) usually has dealt directly with other agencies of the executive branch in NCS matters. The existence of the position of Executive Agent seems to cause extra layering. Possible conflict of interest can arise if the position of the Defense Department is opposed to that of the NCS, which can easily happen in an interoperability matter.

A third factor, the NCS controls no telecommunications money and has too small a staff. As a result, other Federal agencies have no effective incentive to engineer their systems to work with other agencies' systems, and they have not done so. Dr. Richard DeLauer, Deputy Secretary of Defense for Research and Engineering, summed it up by saying, "If you control the resources, you can get the job done the way you want."⁴ The NCS staff of 54 can only concentrate on producing and coordinating national security emergency preparedness telecommunications plans, developing uniform technical standards for telecommunications, managing the restoration priority system, and serving as the manager of the Emergency Communications Working Group of the Emergency Mobilization Preparedness Board.

Despite these handicaps, the NCS has been quite effective when it has been able to exercise authority. An example is

the development and maintenance of the restoration priority system for critical wartime circuits. Users supply justification to the NCS, which submits it to the Federal Communications Commission for approval and then advises the telecommunications common carriers of the priorities. The common carriers only accept restoration priorities through the NCS, and the program has been very successful. The NCS is also very active in the development of national telecommunications standards.

The Office of Science and Technology Policy. Executive Order 12046 tasks the Office of Science and Technology Policy with preparing to execute the telecommunications war powers functions of the President when directed and testing and evaluating the capability of existing and planned telecommunications systems to meet national security and emergency preparedness requirements. A subsequent agreement, signed by both the Assistant to the President for National Security Affairs and the Science and Technology Advisor, further clarified responsibilities.⁵ The agreement spelled out major responsibilities for the Office of Science and Technology Policy in emergency management and delegated plan development and some policy office and NSC responsibilities to the NCS Executive Agent.⁶ The agreement also softened the "unified" and "interoperable" portions of the NCS's original tasking by stating that minimizing or removing technical impediments to assure interoperability of Government telecommunications systems, particularly for use under national emergency conditions, will be a "major NCS objective."⁷ The Executive Office of the President had decided to back off from the clear guidance of previous directives. The Office of Science and Technology Policy has one person devoted to its telecommunications tasks. It delegates its testing responsibilities to the NCS, FEMA, and the National Security Council, and its wartime plans are spelled out with those of the Office of Defense Resources.

Federal Communications Commission. The FCC, an independent regulatory agency, plays varied roles in national emergency telecommunications. Its basic mission is to see

that the public is served by promotion of an unregulated competitive environment and by protection of the rights of free press and free speech.⁸ It manages and tests, in coordination with FEMA, the Emergency Broadcast System, which provides the President and other top national officials virtually instant capability to address the nation by radio and television in time of national emergency.

The FCC also is the authority for establishing restoration priorities for critical defense-related circuits that it determines need restoration. The NCS identifies these special circuits and, after FCC approval, provides them to the common carriers for their planning. The National Industry Advisory Council, a voluntary organization of FCC-licensed organizations, advises the FCC on emergency telecommunication issues, and the FCC Defense Commissioner serves as liaison with all defense-related agencies of the Government. In addition, the FCC reacts to executive branch agencies on other issues when requested. The FCC is represented on an executive branch working group on PD-53, Telecommunications Survivability. The FCC Emergency Communications Division has a staff of eight: a chief, four persons working on the Emergency Broadcast System, and three persons working primarily on the restoration priority system.

The FCC is involved with a knotty national emergency telecommunications issue. The entry of many new companies into the deregulated telecommunications industry, combined with the American Telephone and Telegraph (AT&T) Company divestiture settlement, has caused defense planners to worry about how national communications would survive and be reconstituted after a national disaster. In the past, the AT&T monopoly built hardened facilities and telecommunication systems for this purpose, with several of its major switching centers and an alternate national control center for restoration of long-distance circuits built in underground bomb-hardened sites away from metropolitan areas. Presumably, AT&T customers paid for this in their telephone rates.

Now, with competition in the long-distance telecommunications industry, all telecommunications suppliers must mini-

mize costs and provide increasingly efficient service to remain viable. Unless the Federal Government allots money for national security aspects, the commercial telecommunications companies have no reason to spend their profits in support of national emergency objectives—it would decrease their competitiveness. Furthermore, without a single core (singly-controlled) civilian network, restoration of national priority circuits will be virtually impossible unless one company gets all the Federal business or the NCS deals individually with each of the common carriers. The FCC has proposed a solution to the extra funding issue, that it should be part of the defense budget, but no one has proposed a workable solution to the core network issue.⁹

Office of Management and Budget. Executive Order 12046 transferred two responsibilities, formerly assigned to the Office of Telecommunications Policy, to the Office of Management and Budget (OMB). First, the Director of OMB is to serve as the President's principal advisor on procurement and management of Federal telecommunications systems and is to develop and establish policies for procurement and management of the systems. Secondly, the Director is also responsible for making final disposition on appeals of Department of Commerce radio frequency assignments; three OMB personnel spend a part of their time doing this.

After an investigation of the development of a proposed emergency communications system, the General Accounting Office concluded that the OMB should coordinate with other Federal agencies to clarify roles and responsibilities in emergency communications. Citing agreement by 8 of 12 organizations which received its report, the General Accounting Office stated that it believed all concerned needed a clear understanding of the lines of authority and responsibility at all levels of government.¹⁰ The OMB replied that no divisiveness existed and that all agencies were carrying out their responsibilities in a cooperative manner, though it neglected to address why other executive branch agencies apparently thought that confusion existed.

Executive Branch Agencies

Department of Defense. The Department of Defense has no direct Presidential taskings for national emergency telecommunications. All of its guidance comes from other offices and agencies within the Government.

Using effective communications to ensure positive command and control of both our strategic military forces and our worldwide arsenal of weapons—in all circumstances and conditions of war—is one of the most essential safeguards of democracy and world peace. In times of stress, the White House Communications Agency of the Defense Communications Agency handles communications from the President or the senior national leaders, through command centers, to the controllers of all our strategic weapons systems. The Reagan administration has recognized the importance of strategic command and control by making them equivalent in priority to the major strategic weapons they support—the MX missile systems and the B-1 bombers for example.¹¹ Because we have often procured weapon systems without enough communications for effective command and control, the Department of Defense now sends weapons system requests to Congress with sufficient nonremovable funds for required command and control telecommunications support.¹²

The manning, structure, and location of the NCS make it appear as if it were a part of the Defense Department: the NCS Executive Agent is the Secretary of Defense; the NCS Manager is the Director of the Defense Communication Agency (a lieutenant general); and the NCS Manager's office and staff are collocated with the headquarters of the DCA. Even the NCS Operations Center is in the DCA Operations Center, and they function as one entity, almost solely in support of DCA. This close relationship and staffing preclude the NCS staff from convincingly acting from the national, rather than the Defense Department, level and create the impression that the NCS is part of DOD.

Department of Commerce. When the President abolished the Office of Telecommunications Policy, he transferred several of its duties to the Secretary of Commerce. These duties included both frequency spectrum assignments for US-owned and US-operated radio stations and authorizations for foreign government radio station construction in the Washington, DC area. The Secretary was also to act as the President's representative in virtually all dealings involving the management of the commercial communications satellite system (COMSAT).

The President also delegated coordinating functions to the Department of Commerce. These included advice to the OMB on procurement and management of Federal telecommunications systems; coordination with the Secretary of State on international telecommunications matters; liaison with the FCC on regulation and long-term spectrum planning; presentation of Presidential views to Congress; and coordination of Federal telecommunications assistance to state and local governments. They also included assistance to the Office of Science and Technology Policy in carrying out its duties; formation and conduct of national committees addressing economic and technical analyses of telecommunications policies, actions, and opportunities; and total management of national telecommunications research and development, including study of the computer-communications convergence.

The President assigned two other broad responsibilities to the Department of Commerce. First, he directed the Secretary of Commerce to be the principal advisor on telecommunications policies pertaining to the nation's economic and technological advancement and telecommunications industry regulation. Second, and more encompassing, the Secretary was directed to

provide for the coordination of the telecommunications activities of the Executive Branch, and assist in the formulation of policies and standards for those activities, including but not limited to considerations of interoperability, privacy, security, spectrum use, and emergency readiness.¹³

Despite these national responsibilities, the Department of Commerce was not even mentioned in a subsequent 1978 White House memorandum titled "National Security and Emergency Preparedness Telecommunications Management and Coordination Responsibilities,"¹⁴ or an executive branch memorandum of understanding on "National Security and Emergency Telecommunications Functions."¹⁵

Federal Emergency Management Agency. In 1979 two Executive orders formed FEMA. The first order transferred fire prevention activities and the Emergency Broadcast System from the Commerce Department, as well as flood insurance and emergency housing responsibilities from the Department of Housing and Urban Development.¹⁶ The second order transferred the remaining civil preparedness functions, including civil defense and disaster response, from other executive branches to FEMA. This order tasked the FEMA Director with establishing policies for, and coordinating with, all civil defense and civil emergency planning, management, mitigation, and assistance functions of executive agencies. Further, FEMA's Director was tasked to be the liaison between the President, state and local governments, and the private sector and to stimulate vigorous civil preparedness and response. The Director was to develop an integrated and tested system. And finally, by Executive order, civil emergency was specifically defined as "any accidental, natural, man-caused, or war-time emergency or threat thereof, which causes or may cause substantial injury or harm to the population or substantial damage to or loss of property."¹⁷ To ensure coordination with national strategic policy, the President made FEMA's civil defense policies subject to oversight by the Secretary of Defense and the NSC.

The Federal Emergency Management Agency performs two basic functions in the area of national emergency telecommunications. First, it operates warning and civil defense systems throughout the country (or directs operations as in the case of the Emergency Broadcast System). It operates 10 regional centers that coordinate and manage responses to all

forms of disaster. In a second function, FEMA formulates policy for national emergency preparedness issues.

President Reagan realized early on that centralized management of emergency mobilization planning was essential. On 17 December 1981, he formed the Emergency Mobilization Preparedness Board to resolve all mobilization preparedness issues within the framework of administration policy.¹⁸ A senior FEMA official chairs the Board secretariat, and FEMA coordinates all Board working group activities and serves as well as liaison between the Board and the working groups. The Chairman is the Assistant to the President for National Security Affairs, Hon. William P. Clark.

At the Board's first meeting on 27 January 1982, the working group chairmen for military mobilization, Government operations, and emergency communications made presentations; the NCS Manager (and DCA Director) chairs the emergency communications working group, and the Assistant Secretary of Commerce for Communications and Information is the vice chairman. During this same meeting, the Emergency Mobilization Preparedness Board Chairman directed that each working group develop a draft policy statement for the President. The emergency communications working group drafted a policy statement emphasizing the private sector's role in creating a survivable, reliable, and responsive telecommunications system in all emergencies. One of its major recommendations was the *establishment of a central telecommunications policy focal point within the executive branch and an effective management structure to convert policy into implementable programs*. The policy statement further recognized the legislative and regulatory conflicts, as well as the problem of whose budget will fund the incremental costs of the national security enhancement measures.¹⁹

Current Issues Affecting Telecommunications Emergency Preparedness

Two current issues, the divestiture of AT&T and the FCC's Computer II decision, loom as major factors affecting

decisions about how our nation is to manage its emergency telecommunications. At this juncture, the nature and extent of the impacts of these major changes on national telecommunications are, at best, uncertain. More details on both issues can be found in Colonel George Bolling's extensive analysis of the rulings themselves and their impact on national telecommunications.²⁰

American Telephone and Telegraph Company divestiture. In the past, AT&T held an essential monopoly on US commercial telecommunications. But, the settlement in the Government's antitrust suit against AT&T has raised a number of significant emergency telecommunications issues. When AT&T built its switching and transmission systems, it buried several of its cable routes and switching nodes deep underground to provide the routes with some survivability in wartime. AT&T also owns and operates the commercial "core" network over which almost all Federal circuits are routed. For the Government, relations with the commercial telecommunications suppliers and relations with AT&T have been effectively one and the same.

The AT&T divestiture has enabled entry of many other telecommunications suppliers into the marketplace, thereby complicating management of emergency communications. As of January 1984, the Government must be prepared to do business with a variety of suppliers and sustain continuity on circuits provided by many different carriers and vendors. Moreover, in a competitive environment, common carriers planning to build transmission and switching facilities have no incentive to harden them. The divestiture fragments the national telecommunications network to the extent that it will necessitate a reorientation of management of telecommunications throughout the Federal Government.

Federal Communications Commission's Computer II decision. Implemented in January 1983, the landmark Computer II decision opened the marketplace for "enhanced" communications terminals to full competition. Computer II reduced regulatory controls on all but basic telephone service and precluded the end-to-end circuit control by a single company.

Although the decision facilitated enhancement of computer telecommunications, it brought additional management burdens to Government agencies that obtain and maintain responsive services during emergencies.

Who's In Charge?

Who is the principal national emergency telecommunications policymaker in our country?

Is it the President, who did not delegate it in his order of 1978?

Is it the Chief of the Office of Science and Technology Policy, the office that prepares to exercise the President's war powers functions?

Is it the National Security Council, which coordinates the development of policy, plans, programs, and standards for the mobilization and use of the nation's telecommunications resources in any emergency?

Is it the Executive Agent or the Manager of the NCS, the provider of necessary communications for the Federal Government under all conditions ranging from a normal situation to national emergencies and international crises, including nuclear attack?

Is it the OMB, which serves as the President's principal advisor on and develops and establishes policy for procuring and managing Federal telecommunication systems?

Is it the Secretary of Commerce, who serves as the principal Presidential advisor for telecommunications policies pertaining to the nation's economic and technological advancement and to regulation of the telecommunications industry?

Is it the FEMA Director, who establishes Federal policies for and coordinates with all civil defense and planning, management, and assistance functions of executive agencies for any accidental, natural, man-caused, or wartime emergency or threat thereof which causes or may cause substantial injury

or harm to the population or substantial damage to or loss of property?

Is it the FCC, which regulates non-Government communications, assures the use of radio and television facilities to strengthen the national defense, and is responsible for both nationwide and worldwide telephone and telegraph services and the development and operation of broadcast services?²¹

Each of the above taskings is current national guidance and contributes to the obvious, that relationships and responsibilities of the various players need clarification. When the Government Accounting Office recently reached the same conclusion, 8 of 12 Government agencies agreed.

With the explosion in telecommunications technology and the swift destructiveness of modern war, we cannot continue to permit our nation's telecommunications policymaking to be confused and fragmented. Even so, although this issue has been raised frequently and clearly, progress has been too slow.²² The NCS has made little progress in developing the unified interoperable national telecommunications system directed by President Kennedy in 1963.

Figure 3-1 illustrates some of the fragmented and overlapping responsibilities assigned to executive branch agencies by current directives. The Office of Science and Technology Policy is the only agency involved in all five activities, but it must fulfill these duties with one person. Other agencies are involved with some aspects but have no one to look to for the *real* guidance. Each agency is trying to do its job as it sees it, but this results in duplication and endless "turf" battles.

We need bold initiatives to get our house in order. The next chapters describe a means and chart steps to streamline national telecommunications management to better ensure a cost-effective, credible, and responsive national telecommunications system in peace and war.

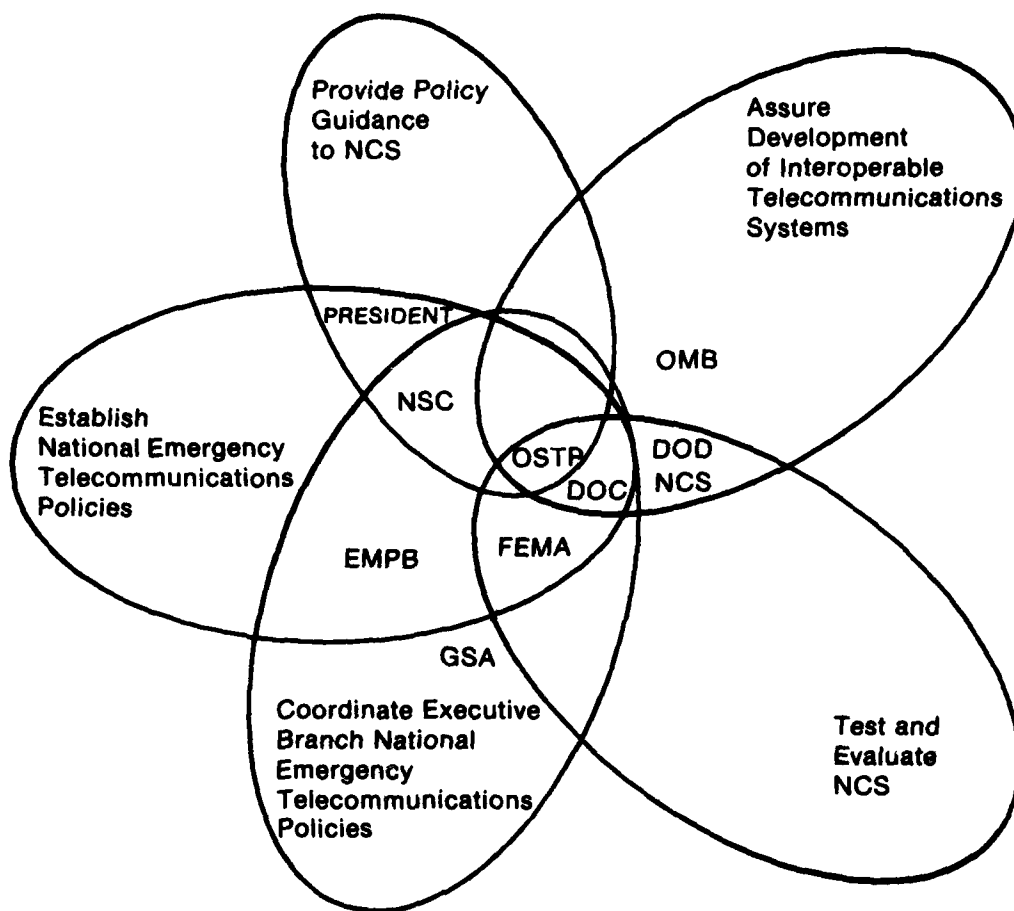


Figure 3-1. National Emergency Telecommunications Taskings

4. OPTIONS FOR TOMORROW

No one is in charge; regulations and directives have grown to the point where no single person or group is making national emergency telecommunications policy with a clear Presidential or congressional mandate. This has caused a dangerous lack of progress toward establishing readiness for national emergencies. Each organization involved is trying to carry out its assigned responsibilities, but the responsibilities are inadequately specified and overlap. Remedial alternatives involve a national emergency telecommunications chief, functions that must be centralized or be located elsewhere, and Federal funds to develop a responsive system.

Who Should Be In Charge?

Overwhelming evidence indicates that our country urgently needs a single, chief policymaker for national emergency telecommunications. Every recent independent study has recommended it, and sound management principles demand it. Fragmentation has caused confusion and waste of resources, and we are left with an ineffective system. The formation of the emergency communications working group in the Emergency Mobilization Preparedness Board is a good first step, but it will not resolve the multiple responsibilities now spread around the executive branch.

Who should this chief policymaker be? Because of the essential importance of emergency telecommunications to the President's duties in time of national crisis, the policymaker needs to be near the President. What are the options?

The President. In his 1978 Executive order, President Carter reserved coordination of policymaking for emergency telecommunications to himself. Because making national telecommunications policy is a full-time job and thus not appropriate for the President, he tasked the National Security Council to provide advice and assistance.

National Security Council. The functions of the National Security Council are related primarily to foreign threats to our national security. Domestic peacetime and domestic emergency wartime telecommunications policies are separate from the NSC mission.

Office of Science and Technology Policy. As part of the Executive Office of the President, the Office of Science and Technology Policy acts as the President's advisor on technological developments, including those which affect national security matters. It also evaluates the effectiveness, scale, and quality of Federal science and technology efforts and coordinates Federal research and development programs. This office could make national emergency telecommunications policy by creating an Associate Director and a staff for Telecommunications. Selection of this office has the advantage that it does not create another entity in the governmental structure but adds a significant mission—very different from research, development, and technology—to the office.

Office of Management and Budget. Because of fiscal oversight responsibility, the OMB must be a key player in controlling the tremendous expenditure of funds involved in the expansion of existing systems and development and procurement of new ones. However, national telecommunications policymaking encompasses the much broader areas of technical capabilities and development, national emergency policy, and national goals, all of which are outside OMB's basic charter.

Cabinet departments. The Department of Defense and the Department of Commerce both have major roles in the current telecommunications structure and large staffs devoted to communications systems and issues. Placing national responsibilities in these departments, however, will only further complicate lines of authority and responsibility. The effectiveness of the NCS, for example, is diluted because it is within the structure of the Defense Department, even though it is nominally separate from the Department of Defense. Burying national emergency telecommunications responsibilities within a cabinet department will deemphasize emergency telecommunications functions.

Federal Emergency Management Agency. FEMA is responsible for coordination of all executive branch actions related to civil emergency preparedness and response, and should remain so. It manages domestic emergency telecommunications supporting the civilian population but is not directly involved with national policymaking, prioritizing of needs, or with establishing defense requirements. Adding these responsibilities will significantly alter FEMA's charter.

Decision Point

No existing Government entity can effectively absorb the telecommunications policymaking and implementing roles. Therefore, the US Government must create a new unit to make policy and assure its nationwide implementation. It must be near the President and yet separate from major departments or agencies where roles can become confused.

These constraints imply the need for a separate unit—either a Federal agency, a department, or an office in the Executive Office of the President. Because of the relatively small size required, I recommend a new unit in the Executive Office of the President, as follows.

The Required Functions

Overall national telecommunications policy and top-level organization, whether for emergency or nonemergency pur-

poses, must be integrated because our telecommunications assets must be used for both purposes. Thus, the national telecommunications unit proposed here could serve as the President's conduit for all telecommunications issues requiring national attention or guidance and must perform only those functions that require centralizing at the Presidential level. The unit can delegate other functions to subordinate units or other Executive branch entities. The following functions are required at the Presidential level:

Overall policy guidance. The chief must be the President's single spokesman for national telecommunications policy matters. This person must act as the liaison between the President and all Executive branch agencies, Congress, the regulatory bodies, and the world of private telecommunications companies.

Policy guidance on emergency telecommunications. All requirements for connectivity, survivability, and interoperability, as well as funding for system enhancements necessary to attain them, must come from this office.

Management of Federal telecommunications funding. This office must have the authority to allocate funds. To manage funding, it must weigh telecommunications requirements against national policy, available money, intended use of the funds, and agency needs. We spend billions of dollars each year on telecommunications, and duplication and shortfalls must be eliminated if we are to afford the telecommunications systems necessary to survive a disaster.

All agency prerogatives for control and allocation of money are closely guarded, but this controversial control must be faced head on. Otherwise we will be destined to continue our currently inefficient use of billions of dollars in an area of crucial national importance. Without a central means to influence these dollar expenditures, any restructuring will be cosmetic as far as effective influence is concerned.

Assurance of continuity of government and national command authority. This office will develop and maintain mechanisms to ensure that the President or surviving leaders can

control all military offensive and defensive actions, as well as effectively direct national resources for the survival and reconstitution of the nation.

Exercise of Presidential telecommunications war powers (on request). The new office should be responsible for exercise of the Presidential telecommunications war powers function (on request) currently assigned to OSTP because of both proximity to the President and access to knowledge of all telecommunication assets and capabilities.

Several related issues should be addressed from a national perspective but need not be within the Presidential telecommunications unit described above. The Presidential unit should delegate and monitor:

1. Developing emergency plans.
2. Planning for coherent design and development of future Federal telecommunications systems.
3. Forming committees to assess joint issues.
4. Setting uniform implementation standards for telecommunications systems.
5. Interfacing Federal and non-Federal telecommunications programs.
6. Exploiting the confluence of computers and communications.
7. Managing system testing for all types of emergencies.
8. Integrating military and civilian emergency telecommunications plans.
9. Participating in telecommunications research and development.

Meeting all of the above requirements will entail a restructuring of our nation's Federal telecommunications hierarchy to provide clear authority lines for a coherent and responsive system that will serve the nation's needs in peace and war.

5. A BLUEPRINT FOR CHANGE

This chapter proposes a blueprint for a reorganized Federal telecommunications structure. It addresses the issues of unity of policy formation, wartime and peacetime operation, and control of budgetary allocations and proposes realignment of functions into the Executive Office of the President and a relocation of NCS functions away from the Department of Defense. As pictured, the reorganization should make it possible to carry out the intent of the founding NCS directive.

The basis of the blueprint is the formation of a National Telecommunications Unit (NTU) in the Executive Office of the President.¹ The functions of the NTU would be to develop national telecommunications policy and goals in peace and war, provide telecommunications guidance in emergency situations, and assure the development of a national telecommunications capability to support our country effectively in peace and war.

To unify the peacetime and wartime emergency telecommunications mission, the Director of the NTU must also have close ties to the National Security Council. During peacetime, responsibility for emergency telecommunications management would continue to be located in FEMA, using policy guidance from the NTU. During wartime, the NTU Director would function as a member of the Office of Defense Resources, coordinating domestic civil telecommunications through FEMA and military communications through direct liaison with the Secretary of Defense. Coordinated telecommunications re-

sponse would thus be prompt and unified by the presence of the NTU Director in the authority lines both in peacetime, times of stress (national or international), and wartime.

The NCS would operate directly under the NTU, but with some mission changes. A shift to this vantage point removes the commonly held impression that the NCS is part of the Defense Department. Although members of the Defense Department would partially man the NCS, the removal of the Defense Secretary and Defense Communications Agency Director from the questionable positions of NCS Executive Agent and NCS Manager would free the NCS to operate solely in the national interest in preparing the national system for peace and war. Relocation also gives the NCS the stature to enable it to deal, in the name of the NTU, with telecommunications organizations throughout the nation.

The NTU Director would be responsible for assuring that designed and installed telecommunications systems meet national emergency telecommunication standards for interoperability, availability, and survivability. On the Federal side, the NTU would control telecommunications funds to ensure that systems are not redundant, that maximum efficiency in use of the billions of telecommunications dollars is achieved, that desired interoperability and survivability are accomplished, and that allocations are based on national priorities when there is not enough money to go around. This means that NTU, and not agencies and departments, would control Federal telecommunications budgets. On the civilian side, after a decision is made on whether funding for national emergency aspects of commercial telecommunications systems will be borne by the Government, as recommended by the FCC, or by the commercial customers in the rate base, as is done now, the NTU Director would provide the technical guidance to enable the common carriers to comply.

The NTU would have a subordinate organization doing much of the technical work now assigned to the NCS. The subordinate organization would do long-range technical planning, monitor the coordination of Federal and non-Federal programs, set standards for interoperability and survivability,

manage the restoration priority system, review system design for NTU, and test all systems periodically under simulated emergency conditions.

Under the NTU blueprint, there will be no more casting about for chairmanship of national emergency telecommunications committees. The NTU would chair the PD-53 working group, other Presidential telecommunications working groups, and the emergency communications working group of the newly formed Emergency Mobilization Preparedness Board. Additionally, because of unique national telecommunications missions, the NTU would take over the *White House Communications Agency*.

With the NTU in place, other agencies would have clear taskings and authority lines. FEMA would still coordinate civil defense and civil emergency planning, under telecommunications policy guidance of NTU. The Defense Department would continue to develop and run strategic command and control and military communications systems, under policy guidance of the NTU. The Department of Commerce would continue as the telecommunications research and development manager, and as the spectrum management agency. (However, Commerce's roles as Presidential representative in communications satellite matters and Presidential advisor on telecommunications advancement and regulation, as well as its liaison roles (with Congress, OMB, states, and commercial companies), would need reexamination and clarification with respect to NTU.) The FCC would, of course retain its roles and liaison with NTU on national policy. The OMB could more easily manage the procurement of Federal telecommunications systems because it would have one point of basic contact, the NTU. The NTU Director would directly apply NSC policy guidance. For the first time, civilian telecommunications companies would see the Government speaking with one voice on telecommunications matters.

Manning for the NTU would come from the agencies from which the functions were transferred. Personnel and cost savings will depend on how many efficiencies are realized from the realignment and how many necessary tasks are not being

done in the existing structure. Filling critical positions in the NTU with experienced communicators should not be a problem.

If implemented, this plan will resolve the issues raised by studies throughout the years, as recently summarized:

One would not be able to discern the importance of telecommunications to national security and emergency preparedness from the haphazard and feeble attention often afforded to these critical factors in the diverse and Balkanized telecommunications forums of the Federal government.

Coping with natural or man-made disasters such as Mt. St. Helens, Three Mile Island, or a surprise nuclear attack requires a rapid response that presupposes unity of purpose and close working relationships with and within the government. In fact, there are now a multiplicity of Federal agencies and congressional entities involved in or affecting national security and emergency telecommunications, with their roles, mission, and jurisdictions provided by separate laws, executive orders, rules, directives, and assignments. The new result of this fragmentation of the Federal government's telecommunication activities and responsibilities is frustration and uncertainty as to the direction and management of telecommunications initiatives in the event of disaster.²

In addressing the issues, the basic problem is that *no one is in charge*. Vague and inconsistent direction from Presidents has led to a structure wherein battles for jurisdiction over policy seem to take up more time than do efforts to produce a workable system. Results of this lack of direction are clear:

1. We do not have an in-place operational telecommunications system to meet the needs of a modern nation in a complex, fast-moving world.
2. We have not successfully addressed the technical issue of interoperability and survivability. We are still building systems which cannot pass information to complementary systems in our telecommunications net, and new systems, like the commercial fiber optic

link in the Boston-Washington corridor, are not being built for wartime survivability.

3. We are wasting money. Report after report has shown that telecommunications systems have been conceived, built, and expanded with little or no consideration of other existing systems and that savings would have been realized if someone had taken an objective look at organizational, national, and technical needs.
4. We do not know where to go for help. A recent General Accounting Office report, critical of a proposed new telecommunications system, was delayed several months because it was unclear to whom it should have been routed for consideration. Commercial telecommunications companies also have difficulties knowing who speaks for the Government in telecommunications issues.

It's time for action. To get on with the urgent task of properly developing our national telecommunications assets, I recommend the following as our next steps:

1. Form a National Telecommunications Unit in the Executive Office of the President, making it the national focus for telecommunications issues.
2. Publish an Executive order cancelling the conflicting guidance that now exists regarding national emergency telecommunications and implement the structure recommended in this monograph.
3. Arrange a fiscal system that assures the National Telecommunications Unit control of the development of Federal telecommunications systems.
4. Fund the Director of the National Telecommunications Unit with the assets necessary to do the job properly.

With these actions, we will remove the obstacles that have complicated and hindered a critical element of national emergency management—the ability to communicate in all circumstances.

EPILOG

Since completion of the manuscript of this monograph, the NCS has been very active, seeking effective national security and emergency preparedness telecommunications policies and procedures in a competitive environment. The NCS met chief executives of US telecommunications firms in March 1982. This group recommended that a Presidential advisory group be formed to consider industry and Government telecommunications planning for emergencies. On 13 September 1982, President Reagan established the National Security Telecommunications Advisory Group with Executive Order 12382. The group reports to the President through both the NCS Executive Agent (the Secretary of Defense) and his Assistant for National Security Affairs. The group met with President Reagan on 14 December 1982, and the President discussed national security telecommunications as a top priority planning issue for his attention. The National Security Telecommunications Advisory Group and its subgroups are now focusing mainly on the establishment of a central coordinating mechanism in support of national security and emergency preparedness telecommunications issues. Without this central mechanism, restoration of Government circuits in an emergency simply could not be done.

Senate bill 999, introduced on 7 April 1983 and referred to the Committee on Commerce, Science, and Transportation, addresses both the advisory group issue and a variant of the recommendations in this monograph. The bill would add a

section on national defense and emergency preparedness which would essentially authorize the President to establish a plan for emergency telecommunications, request participation of telecommunications carriers, and appoint an advisory council (the NSTAC) to examine the structure, policy, and needs for Federal telecommunications management of national security and emergency preparedness. The bill would have the Congress recognize that "the United States has no coordinated international telecommunications and information policies; ... the authority and responsibility to develop such policies is divided among Federal agencies on a conflicting and often confusing basis." The bill would form the Office of the Special Representative for Telecommunications and Information in the Executive Office of the President for, among other things, advising the President on international telecommunications and information policies and coordinating executive branch development of such policies. The Special Representative would chair a task force of executive branch department chiefs which would coordinate development of US telecommunications and information policies. The task force would appoint a committee of manufacturers, providers, and users who would advise it on policy, technical matters, and other factors relevant to its mission. As of early 1984, this Senate bill is still in committee.

ENDNOTES

Chapter 1

1. US, Department of Defense, *The FY 1983 Department of Defense Program for Research, Development, and Acquisition*, Statement by the Honorable Richard D. DeLauer, Under Secretary of Defense, Research and Engineering, 97th cong. 2d sess. 1982 (March 1982), p. 1-17; chapter VII and chapter X spell out the military requirements and how essential telecommunications are to our nation's survival.

Chapter 2

2. US, President, Memorandum to the Heads of Executive Departments and Agencies, *Establishment of the National Communications System*, 21 August 1963, *Federal Register*, 28, no. 168, 28 August 1963, 9413-5.

2. Ibid., p. 9413.

3. Richard B. Foster et al., *Basic Telecommunications Issues Affecting US National Security and Survival*, Technical Note SSC-TN-1232-1 (Arlington, Va.: SRI International, Strategic Studies Center, September 1980), p. 77.

4. US, The White House, Memorandum to the Heads of All Executive Departments and Agencies, *Establishment of the National Communications System*, 21 August 1963, Attachment 2, p. 2.

5. US, General Accounting Office, The Comptroller of the United States, *Report to the Congress—Review of Status of Development Toward Establishment of a Unified National Communications System*, No. B168655, 14 July 1969, p. 29.

6. Ibid., p. 47-50. This report provides a comprehensive analysis of the progress and shortcomings of the NCS from 1963 to 1969.

7. The report was circulated to all affected agencies before publication, and all agreed that it was a comprehensive, factual work. However, parochial interest slipped into the responses. The Defense Department agreed with the report except that portion recommending removal of the NCS Executive Agent and NCS Manager from the Defense Department. The Office of Emergency Preparedness claimed that new mechanisms could enable the Special Assistant to the President for Telecommunications to have more direct access to the President.

8. US, The White House, J.D. O'Connell, Special Assistant to the President for Telecommunications, Letter to Hon. Elmer B. Staats, Comptroller General, 16 May 1969. This letter is notable, as it completely bypassed the OEP Director, Mr. O'Connell's boss. This is another indication that the organizational structure for the NCS was in need of change.

9. US, President, Executive Order 11490, "Assigning Emergency Preparedness Functions to Federal Departments and Agencies," *Federal Register*, 34, no. 209, 30 October 1969, 17567-17599.

10. Ibid., p. 17586.

11. US, President, Executive Order 11556, "Assigning Telecommunications Functions," *Federal Register*, 35, no. 175, 9 September 1970, 14193-6.

12. Charles C. Joyce, Jr., "Ad Hoc Review Group for Organization for Telecommunications within the Executive Branch—Phase I Report," 9 February 1976, p. 68. Mr. Joyce was the Assistant Director of the Office of Telecommunications Policy; this report provides an in-depth analysis of the telecommunications options perceived at that time.

13. US, President, Executive Order 12046, "Relating to the Transfer of Telecommunications Functions," *Federal Register*, 43, no. 61, 29 March 1978, 13349-13357.

14. US, President, Executive Order 12127, "Federal Emergency Management Agency," *Federal Register*, 43, no. 65, 3 April 1978, 19367-8.

15. US, President, Executive Order 12148, "Federal Emergency Management." *Federal Register*, 44, no. 143, 24 July 1979, 43239-43245.

16. Ibid., p. 43245.

17. Ibid.

Chapter 3

1. James P. Wade, Jr., Principal Deputy Undersecretary of Defense for Research and Engineering, "Issues Affecting Defense in the Coming Year," speech presented to the Air Force Institute of Technology Association of Graduates Convention, Wright-Patterson AFB, Ohio, 20 November 1981. In this speech, Dr. Wade called communications, command, and control the "linchpin" for effective weapons deployment and cited an urgent need to centralize telecommunications management to assure interoperability and survivability. He called the telecommunications issue an "interesting, tough, and vital problem."

2. US, President, Executive Order 12046, *Federal Register*, 43, no. 61, 29 March 1978, p. 13354.

3. Ibid., p. 13355.

4. "Why C³I Is the Pentagon's Top Priority," *Government Executive* 14 (January 1982): 14.

5. US, The White House, Memorandum for the Heads of the Departments, Administrations, Agencies, and Offices of the Executive Branch of the Federal Government, *National Security and Emergency Preparedness Telecommunications Management and Coordination Responsibilities*, 5 July 1978. Zbigniew Brzezinski, Assistant to the President for National Security Affairs, and Frank Press, Science and Technology Advisor, signed this memorandum.

6. Although the order assigns these responsibilities to the NCS Executive Agent, the NCS Manager prepares, coordinates, and publishes the plans. One interviewee remarked to me that "... the NCS Executive Agent is only a mailbox."

7. US, The White House, Memorandum, *National Security and Emergency Preparedness Telecommunications Management and Coordination Responsibilities*, p. 4.

8. "Communications in the 80s and the Federal Communications Commission—An Interview with FCC Chairman Mark Fowler," *Signal* 36 (January, 1982): 13.

9. Ibid., p. 18.

10. US, General Accounting Office, *Report to the Director of the Office of Management and Budget—Federal Agency Roles and Responsibilities for Emergency Communications Need Clarification*, No. LCD 80-91, 8 August 1980.
11. Jim J. Tozzi, Assistant Director for Regulatory and Information Policy, Office of Management and Budget, Letter to Allen R. Voss, Director, General Government Division, General Accounting Office, 17 June 1980.
12. "Why C3I Is the Pentagon's Top Priority," p. 14.
13. US, President, Executive Order 12046, *Federal Register*, 43, no. 61, 29 March 1978, p. 13351.
14. US, The White House, Memorandum, *National Security and Emergency Preparedness Telecommunications Management and Coordination Responsibilities*, passim.
15. US, Memorandum of Understanding Between the National Security Council, the Office of Science and Technology Policy, and the Executive Agent, National Communications System, *National Security and Emergency Telecommunications Functions*, 5 June 1978.
16. US, President, Executive Order 12127, *Federal Register*, 43, no. 65.
17. US, President, Executive Order 12148, *Federal Register*, 44, no. 143, 24 July 1979, p. 43242.
18. US, President, Memorandum for all Executive Branch Offices, *Emergency Mobilization Preparedness Board*, 17 December 1981.
19. US, National Communications System, Office of the Manager, Memorandum, *Emergency Communications Working Group Input to Emergency Mobilization Preparedness Policy Statement*, 16 February 1982.
20. Colonel George H. Bolling, *AT&T: Aftermath Of Antitrust: Preserving Positive Command and Control* (Washington, DC: Government Printing Office, 1983).
21. US, General Services Administration, National Archives and Records Service, Office of the Federal Register, *United States Government Manual 1979-1980* (Washington, DC: Government Printing Office), pp. 526-531.
22. A recent and comprehensive study by SRI International, *A Review of National Security-Emergency Preparedness Telecommunications Policy*, by Robert F. Daly et al., February 1981, spells it out

in great detail. This study assesses the impact of regulation on survivability, restoration, and interoperability, and describes options for national security and emergency preparedness improvements.

Chapter 5

1. A more natural title would be Office of Telecommunications Policy (OTP), but this would create confusion with the OTP office of the same name of 1970-1977. The proposed organization, although located like OTP in the Executive Office of the President, would have more authority and control.

2. Robert F. Daly and Donald L. Nielson, *A Review of National Security—Emergency Preparedness Telecommunications Policy*, Final Report, (Arlington, Va.: SRI International, Contract DCA 100-80-C-0019, February 1981).

GLOSSARY OF ACRONYMS

AUTOVON	.....	Automatic Voice Network
COMSAT	.....	communications satellite
C³I	.....	communications, command, control, and intelligence
DCA	.....	Defense Communications Agency
DOC	.....	Department of Commerce
DTM	.....	Director of Telecommunications Management
EMPB	.....	Emergency Mobilization Preparedness Board
FEMA	.....	Federal Emergency Management Agency
FTS	.....	Federal Telecommunications System
GSA	.....	General Services Administration
NCS	.....	National Communications System
NSC	.....	National Security Council
NTU	.....	National Telecommunications Unit
OMB	.....	Office of Management and Budget
OSTP	Office of Science and Technology Policy
OTP	Office of Telecommunications Policy

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